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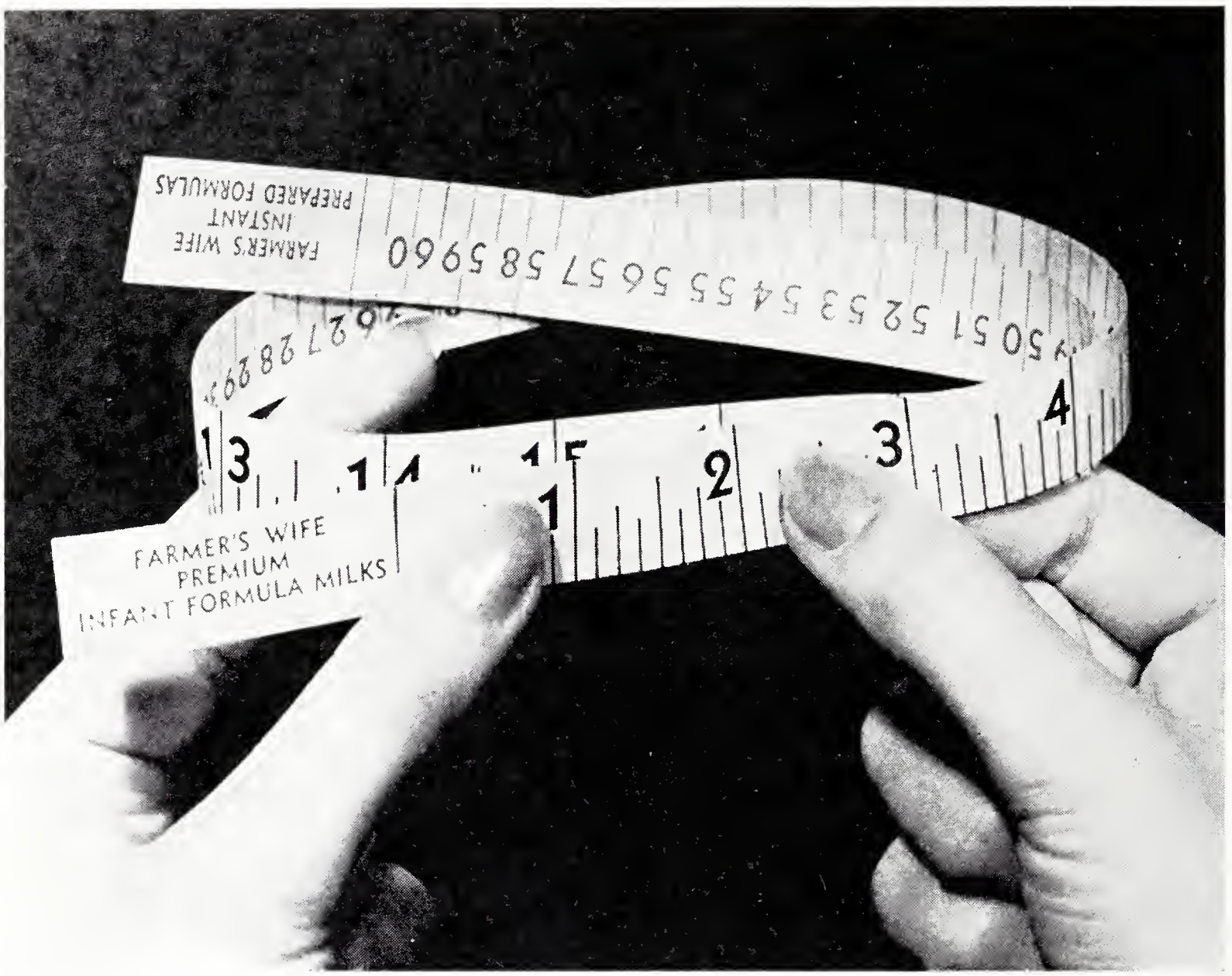

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A demonstration by Dr. Charcot (1825-1893) at La Salpêtrière. Some of his many accomplishments as a neurologist include contributions to cerebral localization, cerebral haemorrhage and gastric crises in tabes and muscular atrophies. He studied hysteria and the rôle of suggestion in its development (as shown in this illustration). He also described the manner in which syphilis affects the joints of the body.

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Drug Addiction

by Harvey Evans B.A., 6T2

Nature and Definition of Drug Addiction

Drug addiction has been defined by an expert committee of the World Health Organization (1950) as "a state of periodic or chronic intoxication detrimental to the individual and to society, produced by the repeated consumption of the drug". Its characteristics include:

> An overpowering desire or need to continue taking the drug and to obtain it by any means. A tendency to increase the dose.
>
> Psychic and sometimes physical dependence on the effects of the drug.

This definition is now widely accepted by those who are particularly interested in this problem and thus some of the terms included are worth further clarification as well as certain other terms associated with drug addiction.

Psychic or emotional dependence, sometimes referred to as habituation means the substitution of drugs as the sole means of solving life's problems instead of the use of more constructive forms of adaptive behaviour. Physical dependance refers to the development of an altered physiologic state which requires continued administration of a drug to prevent the appearance of a characteristic group of signs and symptoms termed "abstinence syndrome or withdrawal illness". Finally the term tolerance which means a declining effect of the same dose of a drug when it is administered repeatedly over a period of time producing the consequent need to push the dose to higher and higher levels.

The exact mechanism for the phenomenon of tolerance is unknown, however, it is most likely due to biochemical changes occurring in the cells of the C.N.S.

Psychology of Drug Addicts

Drug addiction is a symptom of underlying mental disorder and consequently in order to understand why some persons are more prone to become addicted and why certain drugs are chosen in preference to others it becomes necessary to focus attention on the psychological and sociological factors of addiction, in particular the personality of the addict. Careful study has shown that the types of addicts fall into certain broad groups as follows:

> *Psychopathic personalities*: those who try to create a state of elation (positive euphoria). The majority of addicts fall into this group.
>
> *Psychoneurotic personalities*: those who seek relief from anxiety (negative euphoria).
>
> *Chronic painfully ill persons*: those who seek relief from pain.
>
> *Psychotic persons*: those who want to relieve depressed feelings.

Since no one is completely free from stress or anxiety it is theoretically possible for anyone to get "hooked". Nevertheless, some persons are more prone and it is these persons who show certain characteristic attitudes towards themselves and towards others. The attitudes towards self include:

> *Self-preoccupation and self destruction.*
>
> a) Avoids sexuality, social responsibility and is unable to give.
>
> b) Jeopardises all his rights; tends to be masochistic.
>
> *Narcissism* — always searches for his own gratification.
>
> *Self-esteem* is very low.
>
> *Idealized self-image* — signs of material wealth are of such major importance that the need for material possessions borders on panic. The adolescent addicts characteristically are intensely preoccupied with clothes, cars and money.
>
> *Success and Failure* — has such a great need for *being* that he does not allow himself time for *becoming*. He sees only what other men have and he *has not*.

Attitudes towards self and others include:

> *Infantile Traits* — The addict's pattern of behaviour is similar to that of the hungry infant. The latter is appeased only by the breast or the bottle and will not tolerate waiting. Similarly, the former demands gratification by drugs. The addict attempts to acquire security by infantile means and will act impulsively so as to get rid of anxiety.
>
> *Inability to Express Hostility* — necessitates continual intake of drugs in order to suppress aggression.
>
> *Relationship with Parents* — the addict rarely surpasses his parents in position or achieve-

ments; also the father is seen as weak and ineffectual. The addict tends to sympathize with mother.

Repressed Exhibitionism — the addict has great need for success but fear of failure makes him withdraw from all activities; he ridicules those who are not afraid to show anxiety over possible failure and identifies himself with a group which respects daring and bravado. Combined with his secret anxieties and desires there is always a temptation to explore the exciting and forbidden things in life.

The users choice of drug reveals what makes him feel best or "feel normal", a term often used by addicts to describe the effects of the drug. To illustrate one may compare the morphine addict with the alcoholic. The opiate addict is an emotionally primitive person whose main sources of anxiety are related to pain, sexuality and aggression. He seeks the loss of appetite, libido and pain that opiates provide but at the same time becomes attached to the orgiastic thrill associated with the I.V. injection of morphine. On the other hand the aggressive alcoholic chooses alcohol in order to release his pent-up emotions.

It is interesting to note that certain sociological factors also play a role in determining the choice of drugs. The oriental mind has always stressed contemplation, tranquillity, pacificism — hence, opium has been used in the Far East for centuries. However, with the adoption of Western ideals the more aggressive personality has been elevated socially and concomitantly the incidence of alcoholism has greatly increased. Compare this with the British Isles where the incidence of drug addiction has remained significantly low.

Addicting Drugs

The clinically significant addictives may be classified according to their general pharmacological action:

Analgesics (Natural and Synthetic) — e.g. Opium, Morphine, Codeine, Demerol, Methadone, Pantopon.

Hypnotics and Sedatives — e.g. Barbiturates.
Sympathomimetics — e.g. Amphetamine.
Others — Marihuana, Mescaline, Alcohol.

Addiction to Opiates — Clinical Features

The main features are tolerance, physical dependence and psychic dependence. Initially the addict may have taken the drug to relieve pain, to release inhibition, as an experiment, to combat depression, in search of escape from an unhappy situation, or as a means of joining a minority group whose ways appeal to him. He may also be in search of something which he feels is missing in himself and which would enable him to be like other men. There may have been favourable factors such as access to drug supplies or membership in a group in which the usage of the drug is a matter of in-group acceptance.

At first the addict has to overcome nausea, sweating, pruritis and malaise to reach the "honeymoon" stage when the effects are maximal and tolerance has not yet been reached. Subcutaneous injections produce the desired effects initially but eventually the addict takes the drug via the "main line" or intravenously. After the injection there is a short period of overactivity and talkativeness followed by a pleasant drowsiness. After a few minutes the addict wakes up quite abruptly and then allows himself to go off to sleep. This state is referred to by the younger addicts as "being on the nod" or "goofing off". During this state there occur the fantastic opium dreams which are the principal delight of the addict in the earlier stages and to which the addict continually strives to return. These dreams are not completely valueless since some of the finest works of literary art have been the product of such dreams e.g. Coleridge's *Kublai Khan*. In addiction intravenous injection produces an orgiastic thrill which is similar to sexual orgasm except that the sensation is referred to the abdomen rather than the genitals.

As tolerance develops the sedative effects disappear. If enough supplies of morphine are available the individual can carry on his work and there are cases reported in which morphine addiction continued undetected for over 20 years. However, appetite becomes poor, libido is reduced and menstruation ceases in the female addict (pregnancy is rare in addicts).

Diagnosis is made on the basis of history of drug intake, physical examination and testing. Many patients present in emergency departments with serum hepatitis due to the use of nonsterile syringes, and with complaints of acute pain, in order to obtain opiates. The yellow complexion, pin point pupils and the tattooing and pigmentation of the skin in areas where veins are accessible are the outstanding signs. The addict, if refused drugs, becomes restless and the abstinence syndrome appears about 12 hours after the last dose. Most addicts will not remain in the hospital or doctor's office if the drug is withheld and so to confirm the diagnosis it is convenient to test for

morphine addiction by injecting N-allyl-normorphine (Nalline) 3 mg. subcutaneously and observing the patient carefully for 30 minutes. Symptoms often appear at once but if after 30 minutes there are no symptoms the test should be repeated using 5 mg. Nalorphine. If after another 30 minutes there are no symptoms then a further dose of 7 mg. is injected. No symptoms after the injection of a third dose is good evidence that the patient is not addicted to opiates.

The early signs of the abstinence syndrome are occasional yawning, perspiration, nasal discharge and mild lachrymation. This occurs about 12 hrs. after the last dose. In about 18-24 hrs. the full blown picture appears characterised by wide dilation of the pupils, attacks of rigor, and muscle twitching as well as nasal discharge. The patient complains of feeling intensely cold, is extremely restless, literally "climbing the walls", begging for the drug. Attacks of severe cramps in the legs, retching and diarrhoea increase the patient's misery. By the 3rd day, the patient is able to sleep although he may complain of weakness. The severity of the abstinence syndrome varies with different individuals and with the severity of the addiction as well as the type of addictive.

Demerol Addiction

This requires special mention because it is the "Doctors and Nurses Addiction". Demerol is short acting, causes dizziness and a greater degree of elation. It is usually taken intramuscularly or subcutaneously. It is a local irritant and often produces necrosis of the skin which gives rise to abscesses and ulceration. No complete tolerance develops and its toxic properties produce dilated pupils, muscle twitchings, tremors, mental confusion, hallucinations and convulsions. The EEG shows paroxysmal bursts of high voltage waves with epilepsy-like spikes in contrast to the record found in the morphine addict which is characterised by slow waves and a sleep-like record.

Addiction to all preparations containing opium and to all commonly used drugs that are chemically related to morphine qualitatively resembles addiction to morphine.

Barbiturate Addiction

Addiction to barbiturates does not occur unless the patient is consuming more than the usual therapeutic dosage or more than 0.8 gms of the quick acting barbiturates daily. Tolerance to barbiturates is not marked and small increases in the drug intake may markedly increase its toxic effects and push the patient into coma, respiratory depression and death. This is important because it is now estimated that about 25% of all deaths of acute poisoning admitted to general hospitals in the United States are due to barbiturate ingestion. As with morphine addiction, the underlying personality is of prime importance in barbiturate addiction. The majority of addicts are psychoneurotic and are first introduced to the drug by the psysician as a means of treating insomnia. However, barbiturate addiction is often combined with addiction to other drugs. Alcoholics are particularly susceptible to barbiturate addiction and take the drug to relieve the tension after an alcoholic "bender". Morphine addicts often take the drug when they cannot obtain morphine or as a means of reinforcing the effect of morphine.

The barbiturates are usually taken orally; the preferred drugs of the addict are Nembutal, Seconal, and Amytal.

Intoxication with barbiturates resembles intoxication with alcohol. The symptoms include impairment of mental function, loss of emotional control, poor judgment, confusion, abnormal behaviour of various types and sometimes a toxic psychosis. The prominent neurological signs are nystagmus, dysarthria, ataxia in gait and station and dysdiadochocinesis. The EEG shows a characteristic fast pattern.

Withdrawal of barbiturates produces an abstinence syndrome with features in common to that found in opiate addiction and with Delirium Tremens. Following abrupt withdrawal, symptoms of intoxication decline and the patient appears to improve. Eight hours after withdrawal, anxiety, headache, tremor, weakness, vomiting and cardiovascular collapse make their appearance. These symptoms are most severe between 16-24 hrs. after withdrawal and are accompanied by EEG changes (slow waves with spikes). Between 30-48 hrs. convulsions of a grand mal type occur but they may occur earlier or as late as the 8th day after withdrawal. Following the convulsion the patient is usually confused for a few hours and may then recover without further incident. However, a large number develop increasing insomnia culminating in a delirium. The delirium usually begins at night and is characterized by confusion, marked tremors, disorientation in time and place, hallucinations primarily visual and delusions. Agitation may lead to extreme exhaustion and even death. Ordinarily the delirium lasts less than five days and ends with a prolonged period of sleep.

Amphetamine Addiction

The rise of Amphetamine drugs has steadily increased and cases of addiction are becoming commonplace. In Japan in particular, Amphetamine addiction has become a serious social problem. These drugs, benzedrine, dexedrine, have powerful C.N.S. effects, are usually taken orally, and doses taken may rise to enormous levels, e.g. 2,000 mg. a day. Students often take "bennies" to remain awake in order to study for examinations and because of the exhilarating effect, heightened confidence, decisiveness and elevation, continue taking them. Fatigue and other disagreeable feelings of hangover force the patient to maintain and to increase the dose. Thus the state of mind of the "benny" addict varies between restlessness and motor overactivity on the one hand and fatigue and exhaustion on the other. Overdosage produces a toxic psychosis with a strong resemblance to either schizophrenia or mania according to the previous personality of the patient. Testing the urine for presence of Amphetamines is a useful aid in diagnosis.

Preludin, a non-stimulating anorexic has been reported to produce toxic psychosis similar to Amphetamine psychosis due to excessive intake by unstable persons.

Marihuana

Marihuana consists of the dried leaves of the female hemp plant. The usual form of taking the drug is by smoking it in the form of cigarettes called reefers. Unlike the opiates, Marihuana does not produce physical dependence with abstinence syndrome upon withdrawal. Further, it can be withdrawn without too much difficulty and does not lead to physical, mental or moral deterioration. Its main effect is euphoria and psychmotor activity followed by calm and relaxation. In a poorly integrated personality it can produce a toxic psychosis. The importance of Marihuana is that it may lead to addiction to one of the opiates because of its association with the more degraded strata of human society.

Treatment of Addiction

It is generally agreed that the addict cannot be treated on an out-patient basis and thus admission to a hospital or special unit where the staff have experience with the special problems of addiction is vital. The United States Public Health Service located in Lexington, Kentucky, which is now considered as one of the outstanding centres in the world for treating drug addiction, believe that a minimum of 135 days of treatment is required. After physical dependence has been removed the problem becomes one of rehabilitating the patient by improving his general health and countering psychic dependence.

There is little therapeutic value in allowing the addict to suffer from the abstinence syndrome because: 1) it is inhuman, 2) it may lead to serious physical complications and 3) it is thought by many that by suffering the pain of the withdrawal that they have paid their debt to society and are now free to relapse.

A variety of methods are available to alleviate the discomfort of the withdrawal state. These include the use of Chlorpromazine, Insulin, Sopor, and E.C.T. in a variety of combinations plus the gradual withdrawal of the drug. Special care is required in the cases of barbiturate addiction in order to prevent convulsions and delirium which can be aborted by the administration of 3-6 Gms. of Pentobarbitone I.V. EEG control is required

PARKE-DAVIS MEDICAL WRITING PRIZE

The editorial staff of the University of Toronto Medical Journal takes pleasure in announcing a new prize for undergraduates, who contribute to this Journal. The conditions follow:

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3. A committee of professors and teaching staff of the Faculty of Medicine shall make a yearly recommendation to the Parke-Davis Company, as to who the winner for that academic session shall be.
4. The prize shall be awarded to the student who, in the opinion of the selection committee, has contributed to the University of Toronto Medical Journal, the article that combines the best use of the English language with the best effort in preparation. Evidence of careful examination of the medical literature about the topic selected by the student shall be an important criterion. Reports of research conducted by the student himself will be acceptable and favourably considered.

in order to give warning of the possible appearance of delirium or convulsions.

Most important in the treatment is the rehabilitation of the addict. In view of the psychological basis underlying addiction, it is necessary that psychological exploration begin as soon as the addict is admitted.

Rehabilitation includes:

1) Vocational guidance and retraining for new occupations since a large percentage of addicts have never developed an adequate work pattern.

2) Supportive social therapy. Most addicts have inadequate recreational and social life and this program which is diversified to include sports, motion pictures, dancing, reading and other indoor games is an important part of the rehabilitation.

3) Individual psychotherapy is aimed at the patient's personality needs.

4) Group therapy in which there is mutual discussion of emotional problems and social participation with other patients is used in order to fulfill the needs of the poorly motivated patient. A full follow-up system is one of the main aspects of therapy.

Social Factors and Prevention of Drug Addiction

It is difficult to estimate the number of addicts in the general population however, it is known that in the U.S. a large majority are adolescents or young adults. The danger of this younger group is that they form growing points of addiction and are likely, with a long life of addiction before them, to lead many others into addiction. Furthermore, because of the tremendous craving for drugs and their great cost many addicts are lead into a life of crime and depravity. Punishing the addict, such as putting him in jail, does not deter him and only helps to put him under the influence of more experienced criminals. A solution to these problems must be sought elsewhere.

Firstly the addict must be regarded as a sick person, not a criminal and must be treated promptly medically, not punitively. Secondly, many young addicts profess that had they known of the nature of addiction they never would have become "hooked". Hence a program of education and mental health beginning in the high schools would certainly be effective in reducing addiction. Thirdly, it is the importers and wholesalers who make astronomical profits in the illicit drug traffic who should be dealt with severely; they are the real *criminals*. The pedlar and pushers who work for them are addicts themselves and push the drugs in order to insure their own drug needs.

Fourthly, the physicians themselves can help in preventing addiction. They should avoid prescribing barbiturates continuously for relief of nervousness and insomnia especially in neurotic patients or in those with a history of alcoholism, because such patients are prone to take drugs in excess and become addicted.

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ABSTRACT: *Treatment of Methanol Poisoning by Extracorporeal Dialysis.* J. H. Shinaberger: Archives of Internal Medicine, 108: 937, 1961.

Dialysis has been found to be an effective method in the treatment of methanol poisoning, since it removes the methanol and its toxic oxidative products from the circulation. In this article the author records one case of methanol poisoning treated successfully with dialysis by the Kolff artificial kidney, combined with ethanol and bicarbonate infusion. The rationale for the ethanol infusion is that it inhibits the metabolism of methanol to its even more toxic oxidative products, while the bicarbonate was to combat the acidosis produced by those same oxidative products. The author recommends such a three-pronged attack, advocating extracorporeal rather than intraperitoneal dialysis (wherever practical) because of its rapidity of action. A.F.D.C.

Recent Advances

This original article has been contributed by A. M. Wiley M.D. (Dublin), Ch.B., F.R.C.S. (Eng.), F.R.C.S. (C.), M.B.E. He is attending Surgeon (Orthopaedics) at the Toronto Western Hospital and Clinical Teacher at U. of Toronto Faculty of Medicine.

CONTRIBUTOR: Dr. A. Murray Wiley

The Management of Fractures

A Long Look at Fracture Methods

Every "good book" on fractures contains the views of one, or a group of surgeons. However, in few branches of surgery is there more difference in opinion, often wide, as there is in the best method of treating certain fractures. This is in some extent due to ignorance of functional end results: until comparatively recently there was a shortage of good follow-up studies of fractures. The subject seemed too simple to warrant much research.

Basically there are two main schools of thought in the handling of a fracture.

1) Non-operators.

2) The Operators.

In one Centre the approach to fractures will be "conservative", and in another it will be "radical". Surely there must be only one best way to treat a fracture?

The conservative disciples concentrate on "closed methods" (manipulations). In this they often excel. In their hands the practised "tour de force" is a pleasure to behold and cultivated only by long experience. They regard surgery as liable to be followed by the introduction of infection or by delayed union. The Operators certainly obtain straight bones and probably less inconvenience for the patient. That is, if they use wide and sound methods of internal fixation. Some even claim that union may be speeded by surgery. Open surgery for fractures seems to be more widespread in those States where the protective association premiums are highest. To the lay public, a cutting operation and alignment on the bone ends suggests that something really is "being done". Whereas the outpatient "wrapping-up" of a fractured bone in a cast may well savour of negligence.

Of course, as with all controversial issues there must be a happy medium. Undoubtedly many fractures require no surgery while others benefit from it. For some fractures, the optimum method of treatment has even now not yet been settled. There is no doubt at all that in inept hands open surgery on closed fractures may have catastrophic effects on the life and limb, but to argue that with modern techniques and specialist care there is a danger of "infection" and of "delayed union" is simple exaggeration. These complications should be avoidable.

For a reasoned approach to fracture treatment one must review some basic pathology. Even some of this is controversial.

The Healing of a Fracture

The factors which influence this are: a) General and b) Local.

General Factors. These are theoretical only. Not even in advanced malnutrition "Belsen cases", or advanced senility "Toronto cases" is union delayed, nor indeed in glandular disorders, e.g. Cushing's syndrome, is fracture healing noticeably impaired.

Local Factors. Excluding tumour tissue the local factors which influence healing are apposition, proximity of periosteum, presence of a clot between bone ends, motion, and local infection. The last two factors are much discussed. Some surgeons maintain that a little motion stimulates callus. Wihout doubt a little infection has the same effect. The crux of the matter lies in the words "a little", certainly "too much" will delay union. It would seem much safer to exclude both. Fractures should be absolutely immobilized, and generally speaking a cast is only a mediocre way in which to do this.

Modern Trends in Fracture Management

Are there any?

No amount of attention to the bone or the patient will speed normal union — though sometimes treatment, "conservative" or operative may impede it.

New Apparatus. Much work is being done on the devising of stronger, more streamlined devices for fixing bone ends together. Notable among these is the development of the Hicks plate. This is a narrow but strong plate with side lugs, so strong that in many instances the patient can use the limb within a few days of application, although Hicks does not recommend this. To-day, all modern internal fixative devices are made of non-reactive

alloys. Plates are placed on and not under periosteum (of course). Intramedullary rods do not have the disadvantage of interfering with periosteum at all. Plastic glues have so far proved most disappointing, although some surgeons continue to use them in considerable numbers of clinical cases.

The Soft Tissues. The attainment of bony union is not the only aim of fracture treatment in this age of trauma to otherwise healthy and often young individuals. More rewarding of the trends in fracture management has been the enlargement of interest in the *soft tissue damage* sustained with the fracture. Function is all important to an injured part. Alignment, ideally good, takes but a second place.

Basic Principles of Soft Tissue Healing

Rest vs Movement?

Hilton's classic views on the virtue of rest and healing are amply confirmed experimentally when related to inflammation. Perhaps more queried is this thesis when applied to soft tissue repair. There can be no doubt that the early delicate tissue of a healing muscle and ligament develops more adequately when the part is at rest. However, prolonged rest curtails lymph flow and promotes oedema. Furthermore, torn muscles, ligaments and fascia heal by fibrous tissue, the less contracture of which the better in many instances. When the bone itself is rested for a long period of time it rarefies; witness the osteoporosis of poliomyeltis and limbs immobilized long in casts. We probably should rest an open wound and a graft, where sepsis is to be limited and tissue differentiation is to be encouraged respectively.

Comment:

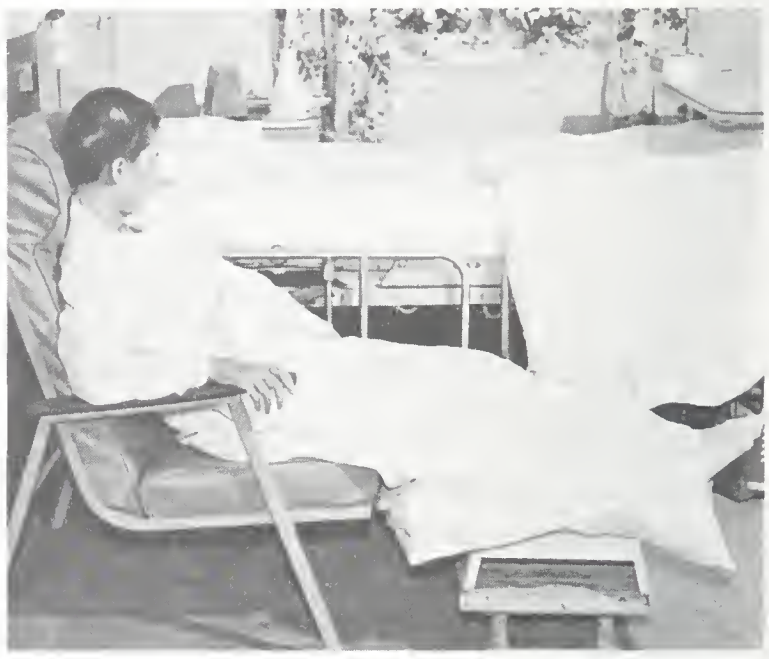
It is rational practice in fracture treatment to place the bone ends together, impact them, or fix them rigidly together some other way, and to return part and the patient to use at the earliest opportunity.

Early Mobilization

This applies to:—a) the patient as a whole and b) the affected part.

Mobilization of the patient. In *multiple injuries* rigid internal fixation permits easier nursing earlier ambulation and offers minimal use of casts, with early mobilization of the local soft tissues and joints. (Fig. 1)

—FIG 1—



Multiple injury case at four weeks after admission. Head injury and fractured femur (R). Early rehabilitation by intramedullary nailing of femur.

This principle is sometimes applied to *severe vertebral fractures* with cord damage. A plate applied to the fractured segment facilitates nursing and bladder care and minimizes discomfort. Early fixation of an unstable spinal fracture is said to minimize danger to nerve roots stringing across the fractured segment. These plates often require removal. Their use is at present controversial but gaining more wide acceptance. (Fig. 2)

—FIG 2—

Plate on unstable fracture of 1st Lumbar vertebra.

The Smith Petersen pin allowed early mobilization of the patient with fractured hip and saved hundreds of lives. Owing to a high incidence of late bony necrosis it is being replaced by the Moore prosthesis. In time no doubt it will be found that this too is not ideal.

Local Mobilization. The importance of *mobilization* of soft tissues is paramount in dealing with fractures of the fingers. In the treatment of fractured fingers the casualty intern is probably familiar with the various elastic finger splints and traction devices, some bizarre, which have been devised. It is probable that few of these are necessary — indeed are advisable. Similarly plaster-of-paris casts have little place in the treatment of fractured phalanges, as the number of stiff surgical digits will testify.

Once adequate stable reduction of a fractured finger is obtained in many instances, certainly in fractures of the middle phalanx, and probably in proximal phalanges and metacarpals as well, it requires only to splint one finger to the other (to prevent rotation) and to encourage the use of the hand. (Fig. 3)

—FIG. 3—

A method of treoting froctures of the fingers

This principle works well for the disabling collateral ligament injury of the fingers and for intra-articular fractures where tight intra-articular adhesions are to be avoided. It is interesting to note that only recently has the anatomy of the inter-phalangeal joints and their surrounding ligaments been given much attention and adequately described.

Fracture of the proximal phalanges are a disabling injury at the best of times and are liable to lead to stiffness of the flexor tendons due to the invasion of the flexor sheath by callus.

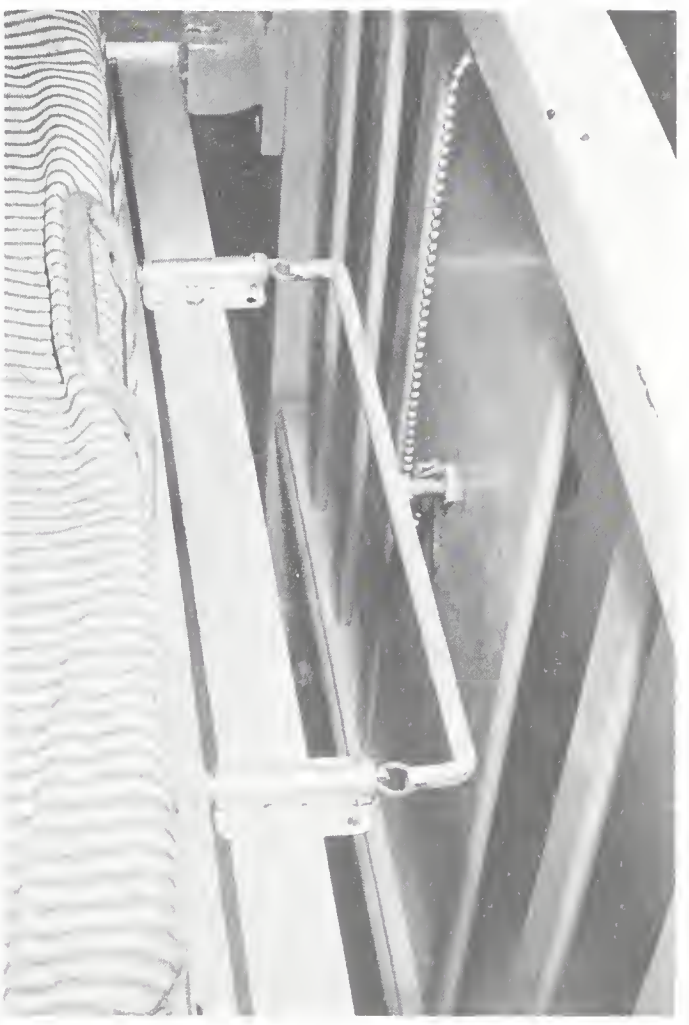
Fractures about the Knee

The principle of early mobilization applies particularly to fractures about the elderly knee where immobilization of a joint commonly involved by some degenerative disease may lead to painful stiffness. In the treatment of condylar fractures of the tibia beds so devised to permit early movement are now used in some hospitals. (Figs. 4 & 4a)

—FIG. 4—

Drap mattress far mobilization af knee injuries. Tractian can be applied over end af bed at same time.

—FIG. 4a—



Clase up af safety catch to prevent mottress fram falling.

Conclusion

It would seem apt to finish with a word of caution against over enthusiasm in the use of rigid fixation and early movement. The encouragement of early movement is liable to be painful though experience suggests that this is quite minimal when the bone is properly fixed. There are good grounds for believing that an internal fixative device looses its grip after about three weeks within a bone, due to a resorption. At this period some form of supplementary external splintage such as a cast, may be prudent. However, the advantages derived from the really early mobilization of the soft parts more than justifies the adoption of such measures.

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Induced Abortions

by Alex Marks 6T2

The views expressed by the author in this paper do not necessarily reflect the opinion of the Editor or The Medical Society of the Faculty of Medicine at the University of Toronto.

Induced abortions are occurring in large numbers all over the world. The medical profession, whose duty it is to educate the public, has not taken the initiative to throw light on this subject so clouded by prejudice and ignorance.

Religious dogmas lag behind the law, the law lags behind medical practice, and medical practice lags behind common sense. It is high time that these lags were eliminated and the question of abortion be considered in the light of international events, in relation to the present time.

This then is the issue. The following are the facts.

The Law

Canada

The destruction of the foetus for any reason other than to save the life of the mother is a criminal offence punishable by life imprisonment. A pregnant woman who attempts to induce a miscarriage may be sentenced to two years in jail.

Britain

The British statute law, similar to that of Canada, was tested in 1934 by A. W. Bourne, a prominent London obstetrician, who openly performed an abortion on a fourteen year old girl raped by a soldier. Mr. Justice Macnaughten handed down the following decision: "If pregnancy is likely to make the woman a physical or mental wreck, the jury is entitled to take the view that a doctor, who in the circumstances and led by his belief operates, is operating for the purpose of preserving the life of the mother", and the jury returned the verdict of "not guilty".[6]

United States

In forty-six states abortion is only permitted to save the life of the mother, and in three states to preserve the health of the mother as well.

The Administration of Justice

The actions of the courts reflect the law of the country more accurately than statutes.

Canada

From a review of twenty-three cases of abortion convictions in the province of Ontario dating back to March 1949 the following information was gathered.[1] In 19 cases the sentences varied from 6 months to 5 years, bearing no relationship to the number of abortions performed in each case, and from 1 to 5 years in 4 cases involving the death of a woman resulting from abortion. Two doctors were found guilty and their conviction called for an automatic suspension of the right to practice in Canada. Twelve convictions, including three involving the death of a woman, carried a sentence of two years or less. During that period a great number of cases were brought to trial and acquitted. Two cases (one an M.D.) were acquitted and brought to trial five years later on another abortion charge. One woman was found guilty and sentenced on three different occasions five years apart. Therefore neither threat nor actual punishment is likely to discourage a determined abortionist.

The attitude of the courts and the police toward abortion is unlike that toward other crimes. In May, 1953, the police presuaded a woman to go through with an abortion after she had changed her mind, so that they might catch the abortionist. A judge once told an accused that he might understand her doing the operation, but that it would always bother him why she had done it for so little ($25).

In convictions of abortion the penalty does not correspond to the magnitude of the crime, but varies with public opinion at the time of conviction. In 1947, at a time when the Montreal police were under pressure to crack a financially successful abortion ring, a physician was found guilty of manslaughter in the death of a woman resulting from abortion and sentenced to life imprisonment.

Because their right to practice is suspended in addition to their jail term, doctors doubtlessly are punished more severely than other abortionists. Physicians have been known to commit suicide following conviction. This is ironic, in view of the fact that the risk of the operation is least when performed by a member of the profession.

United States

There is proof that certain assistant district attorneys have been paid off by abortionists to secure legal protection for their practice. In the state of New York, where 100,000 criminal abortions were performed annually in New York city alone, proceedings on charges of abortion were completed against only 77 doctors in the period 1936-39. Fifty-two cases were dismissed, 4 were suspended and licenses of 7 were revoked.[2] In 1956, in Akron Ohio, a seventy-two year old practitioner admitted to performing 400 abortions yearly since 1934 at fees totalling more than $1,000,000. He was sentenced to four months in jail.[1]

John Harlan Amen, Assistant Attorney General of the state of New York has said, "where moral or common sense of the community looks upon criminal abortions with complacency or toleration, it is most difficult for prosecuting officials and courts to extend themselves to the utmost in an effort to secure a conviction."[2]

The Criminal Abortion

United States

At a recent national conference on abortion, one of the participants said, "I would like to point to the artifact of distinction between illegal and therapeutic abortion. Actually, according to my definition, in many circumstances the difference between one and the other is $300 and knowing the right person."[3]

The number. There are approximately 1,000,000 abortions per year in the United States. This represents 1 abortion per 4 live births. Between one-fifth and one-quarter of the white American women have had at least one induced abortion. (Kinsey).[15]

The woman. Nine out of ten of all illegitimate pregnancies end in induced abortion, yet these account for only 10% of the total number of abortions. Ninety percent of abortions occur among married women. The incidence of abortions increases with the number of previous births showing a marked rise after 5 births. The total incidence of criminal and therapeutic abortions is greatest in the lower and upper income brackets. In the lower brackets abortions are mostly criminal, in the upper, half are criminal and half are therapeutic. Families of low income cannot afford the burden of an extra child and procure a criminal abortion regardless of risk whereas women of high income can afford the luxury of a criminal abortion performed by a specialist, or can even buy a "therapeutic" abortion. Abortions are more common in urban than in rural areas. There is no appreciable difference in the incidence of abortions between the Roman Catholic, Jewish or Protestant population. Abortions are more common among women who use contraceptives. Apparently a woman who does not want a child will try contraception first, and then if she slips up will go to the next best thing. Finally, the woman who seeks an abortion is neither stupid nor uneducated. One random study of 475 women who had had an abortion revealed that 67% had completed highschool, 22% had some college training and 27% were college graduates.[2]

The toll

The number of abortion deaths in the United States in 1957 was 260. This figure is surprisingly small when one considers that many are performed in dirty surroundings with unsterilized instruments and without surgical cleansing of the parts. Ninety percent of abortions are performed by competent physicians, and those who get in trouble are the self-induced (8%) or those performed by a non-medical abortionist (2%).[3] The morbidity resulting from criminal abortions is undoubtedly very significant, even at the present time. It was estimated in 1942 that 50,000 women a year became sterile or otherwise invalidated from abortions in the United States.[2]

The fee for abortion varies from $25 charged by the woman down the street to $400-$1250 charged by some physicians.

The fear that abortion destroys a significant amount of potential life and is a threat to the growth of the population is unfounded. A 65% reduction in the abortion rate in the United States between the years 1940 to 1970 would increase the population of the country by less than 1%.[2]

Therapeutic Abortion

In the United States, Canada and Britain the frequency of therapeutic abortions varies from 1:35 to 1:16,750 live births among different hospitals. There are five times as many abortions in private hospitals as in municipal hospitals in New York city. (Jeffcoate)[8] According to the strict letter of the law most therapeutic abortions are illegal.

Medical indications are decreasing and psychiatric indications increasing in frequency as causes

for therapeutic abortions. Eugenic indications to forestall the birth of an abnormal child, as in rubella in the first month of pregnancy, are accepted. Occasionally rape cases are treated by termination of pregnancy.

Medical indications

The following maternal illnesses justify the consideration of a therapeutic abortion.

General diseases

1. Hypertensive
2. Renal
3. Heart
4. Carcinoma of cervix
5. Previous carcinoma of a) breast
   b) uterus
   c) skin (these tend to flare up during pregnancy)
6. Severe diabetes

Diseases associated with pregnancy

1. Pre-eclampsia and eclampsia
2. Placenta praevia
3. Hyperemesis gravidarum
4. Hypoplastic anemia of pregnancy

Psychiatric indications

Psychiatric indications account for 39% of all abortions. Because knowledge in this field is not widely disseminated, intense treatment of this subject is indicated in this paper.

Cappon cites schizo-affective gestational psychosis, in which pregnancy *per se* plays a major etiological part, as the only absolute indication for abortion.[11]

A past history of postpartum psychosis is considered by some psychiatrists as an indication for abortion. Others believe that the puerperal psychoses (schizophrenia 50%, depressive 40%, toxic delirious 10%) are not disease entities but rather that childbearing provides a non-specific stress which produces a breakdown in a few predisposed individuals. Harrington estimates that a woman with a previous puerperal breakdown has only a 1:7 chance to experience a breakdown with a subsequent pregnancy.[6] In acute psychoses or organic psychoses with a progressive downhill course pregnancy may lead to a rapid deterioration of the mental state, whereas it has little effect on well established and chronic psychoses.[6]

When the possibility of suicide is suspected, especially in those women who are depressed with feelings of guilt and self-reproach, termination of pregnancy must be given serious consideration. Women who threaten suicide seldom carry it out, except those women who are abandoned by their male partner during pregnancy. In a 1948 study of 344 women in Sweden who were refused abortion, 18% threatened suicide but none committed it. However, a review of autopsy records on 240 female suicides in Sweden between the years 1944 to 1955 revealed that 8% were pregnant.[9]

The Swedes take mental stresses which accompany pregnancy into account when evaluating the justification for an abortion. Factors such as the socioeconomic burden of another child, the abandonment of the pregnant woman by her male partner, the emotional maladjustment of the woman with her partner because of physical or social abuse, are given the same serious consideration as the mental status of the woman.[9]

There is a general lack of agreement and uniformity of decision among psychiatrists regarding therapeutic abortion. Several British studies have demonstrated that there is no significant benefit to the mental state of the mother from a psychiatrically indicated therapeutic abortion.[6] In Sweden 79% of a series of women who had been granted legal abortion for psychiatric or sociopsychiatric reasons, but who did not undergo the operation, suffered no deterioration of their mental health after the birth of the child.[7] These facts suggest that psychiatric criteria for abortion should be carefully reevaluated.

Finally, any expected benefit from an abortion must be weighed against the possible risks, physical and mental, resulting from the termination of pregnancy.

The Risk of the Abortion as an Operation

The complications of an induced abortion are:

A. Death
B. Morbidity
   (a) *early*
      1. perforation
      2. fistulae
      3. thrombophlebitis
      4. haemorrhage
      5. anaemia
      6. sepsis
      7. shock
      8. air embolism
   (b) *late*
      1. sterility
      2. complications in subsequent labour:

ectopic pregnancy
(spontaneous abortion)
3. menstrual irregularities
4. chronic pelvic infection
5. psychological

Obstetrical textbooks quote ancient figures for postabortal mortality and morbidity. It is deplorable that many physicians are influenced by such unreliable statistics.

The most reliable evaluation of abortal risk comes from recent reviews of hundreds of thousands of legal abortions performed by qualified specialists with excellent hospital facilities in Eastern European countries. A mortality rate of 6/100,000 is found which compares favourably with a mortality of 17/100,000 for tonsillectomy and adenoidectomy and the lowest maternal mortality in the world of 24/100,000 live births (for the white population in the United States). The total early morbidiy, perforation of uterus, haemorrhage, fever and others, is less than 2%.[10]

Scandinavians report an incidence of involuntary post-abortal sterility of 1-6%.[10]

British studies estimate that guilt reactions of varying severity occur in 25-59%.[6] One must consider however, that a woman who is forced to carry an unwanted pregnancy to term may give the offspring up for adoption. Such women later often suffer more severe psychological reactions than do women who have had an abortion.[2] Scandinavian reports indicate that 89% of women suffer none or mild self-reproaches following abortion and 11% suffer serious self-reproaches. Normal and well-adjusted women rarely experience any postabortal ill effects and the majority of serious guilt reactions occur in psychoneurotic patients. "The majority of the Women" writes Martin Ekblad, "had been only satisfied with and grateful for the operation and had not had any depression or demonstrable impairment of their psychic health through the abortion."[9] U.S. studies find an incidence of 9% for postabortal guilt reactions.[8]

The International Situation

France

In this Catholic country, where abortion is illegal and severely punished, criminal abortions equal live births in number. The death toll is up to 10,000 to 18,000 per year, mainly among working class women who cannot afford medical abortionists.[1]

China and Japan

Japan (1948) and China (1957) legalized abortion to keep down a rapidly expanding population. Both countries consider abortion a poor method of birth control and look forward to rendering all abortions unnecessary through a vigorous contraceptive education. In Japan the fee for aborting is $2 to $3, the ratio of live births to abortions is 1:1, mortality is 200/100,000, and postoperative complications occur in 47%.

U.S.S.R. and the Eastern European Countries

Following the lead of the U.S.S.R. (1955) most of the countries in Eastern Europe (except East Germany) have adopted legislation permitting interruption of pregnancy at the request of the pregnant woman or on very broadly interpreted social indications. Abortions are performed in state hospitals by gynaecologists and are limited, unless medically indicated, to pregnancies of less than three months gestation. Consequently mortality rates of 6/100,000 and postoperative complications of less than 2% can be maintained.

The ratio of live births to abortion varies from 1:1 (Hungary) to 1:10 (Poland). An enthusiastic contraception education program is established to eliminate the necessity for abortions in the future.[10]

Scandinavian Countries (Denmark, Norway, Sweden)

Abortion is legal for broad socioeconomic, humanitarian, eugenic, psychiatric and medical reasons. Abortion rate is 57.4 per 1000 live births (Sweden). Criminal abortions have not decreased (Sweden) in number and occur predominantly in married women.[7] Large cities have centres where women may apply to have their abortion request tested. Private consultants may also recommend abortion. The procedures required for the authorization of abortions are time consuming so that ¼-1/3 of all abortions are performed after the third month. Mortality rate is 66/100,000.[10]

A 1955 analysis of 479 women granted legal abortion in Sweden revealed the following statistics:

1. 59% were married, 27% single, 13% widowed, divorced etc.
2. Most were between the ages of 21 to 30.
3. 96% had 1 to 4 children.
4. 58% were chronic neurotics or personality deviates (compared with 15% in the general population)

5. If application had been refused, 48% admitted they would have given birth to the child; 18% would have had recourse to criminal abortion; 3% would have committed suicide.

   The latter two groups are composed mainly of women who had been abandoned by their male partner following the onset of pregnancy.

6. 37% of those women who were left unsterilized following the abortion became pregnant again within 3 years. Of these 75% had become pregnant unintentionally.

The study further showed that the group of women who were married and living harmoniously with their husbands would have in most cases given birth to and kept the child if refused an abortion. It was this group as well, which most often became pregnant again in the three years following the abortion. Therefore in retrospect, for most of these women abortion was not indicated.[9]

The Ethical Angle

Abortion has probably been with mankind as long as intercourse. A review of past practices is helpful in understanding the present attitudes.

Several uncivilized tribes practiced abortion because of poverty. To-day China and Japan have revived the practice of meeting population expansion with abortion. It must never be forgotten however, that both these countries aim at replacing abortion by contraception.

In the Talmud abortion is permitted to save the life of the mother, since the foetus is not considered to be alive or in possession of a soul till birth.

Aristotle claimed that the soul of a male is infused on the fortieth day after conception and of the female on the eightieth. Plato set the time at the moment of conception but recommended abortion for foetuses fathered by a man over forty for eugenic reasons. The Stoics declared that the soul does not exist until birth and the Roman law excepted abortion from the stigma of murder.

Roman Catholic dogma establishes the entrance of the soul into the body at conception and therefore "the direct, deliberate, disposal of an innocent human life" (Pius XII) is forbidden under all circumstances. The inconsistency of the church is revealed by its own laws (it allows killing in self defence and war), and by the actual practice of its disciples (Roman Catholic countries such as France, the Roman Catholic population such as that in the United States). The Globe and Mail editorial of Sept. 1, 1961 asks: "The churches have a right to present their point of view of the moral issue to their adherents, but is this perhaps where their right should stop and that of an individual begin?"[1]

In the United States the wealthy woman may purchase a "right" and "legal" therapeutic abortion, whereas her less affluent sister is forced into immorality at the hands of a criminal abortionist.

The freedom of the individual is preserved in the communist countries where a women is allowed to decide on her maternity being provided with the best medical protection and effective contraceptive advice for the future.

The Voice of Reason

"Let the good of the people be the paramount law." Cicero.

Lawyers, religious leaders, physicians, sociologists, members of parliament, judges, moralists in North America and Britain have given support to a movement for legal reform in the field of criminal abortion. It is indeed deplorable that law and medicine, which should be on the vanguard of social progress, lag far behind public opinion and common practice.

There is general agreement that the present conditions do not diminish the number of abortions but drive them underground. Women are often forced to submit themselves to operations by unqualified butchers, in the worst possible conditions. Fortunately only 260 women are killed yearly in the United States. However, where life is concerned numbers do not represent the magnitude of the disaster. The toll in injury; physical, social and economic, runs into thousands. Here, society is a murderer, and abortion is not an individual but a social crime.

Doctors who are willing to help are handcuffed by the law. Some, in the Mount Sinai Hospital of New York, place themselves in jeopardy of legal prosecution. Others operate in secrecy, hurry and fear, in unfavourable conditions. Still others continue their "respectable" practice, while referring patients to colleagues who are willing to take the risk. "The law makes hypocrites of us all," writes Dr. Alexander Guttmacher, "we abandon women in their greatest needs to the criminal abortionist."[1]

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In *Canada,* as early as 1953, Dr. Daniel Cappon of Toronto told the annual meeting of the Canadian Psychiatric Association that a new age demanded a new attitude toward abortion and called for "an international unification of principles on the subject."[1] The following recommendations for legal indications for abortion have been suggested:

1. to preserve physical and mental health of the mother		(Dr. Ben Schlesinger, University of Toronto, Department of Sociology Dr. E. C. McCoy, executive director, CMA of British Columbia)
2. humanitarian	rape	(Rabbi Feinberg, Toronto, Reverand F. H. Wilkinson, Anglican bishop of Toronto)
	criminal coercion	(Schlesinger)
3. socioeconomic conditions		(Schlesinger)
alcoholism, financial difficulty		(Coppan)
5. voluntary, at mother's request if doctor is in agreement		(Individual lawyers at Canadian Bar Association meeting, Winnipeg, 1961)
		(Feinberg)
6. eugenic, to rid woman of an unwanted abnormal child mental defectives		(Several lawyers at Canadian Bar Association meeting)

Dr. Jack H. Walters of the OMA said: "the problem is of bringing the law into line with the present practice rather than introducing any radical changes."[1]

In the *United States* national conferences on abortion in 1942 and 1955 stressed the large incidence of criminal abortions being performed annually, the mortality and morbidity toll from these operations, the hypocrisy of "respectable" medical practice, the need for reform in outdated legislation, the desirability of bringing the problem into the open before the publc eye to eliminate prejudice and ignorance, the urgency of destroying the secrecy and shame surrounding the abortion so that women desiring one might be able to discuss their problems with qualified persons instead of being driven to take desperate measures alone.[2, 3]

The following proposals for legal indications are now in consideration before the American Law Institute:[1]

"If continuation of the pregnancy would gravely impair the physical or mental health of the mother,

If the doctor believes the child would be born with grave physical or mental defect,

If pregnancy resulted from rape or incest."

In *Britain* Professor Glanville Williams, Quain Professor of Jurisprudence at the University of London, declares: "serious physical injury to the mother who is a human being with full capacity for pain is an evil greater both morally and socially than the destruction of the foetus, at any rate if the foetus is in any early stage of development."[1] There is an abortion law reform association which leads the fight for legalized abortion. However, a bill proposed by Kenneth Robinson to the House of Commons listing the following legal indications for abortion was talked out.

1. Child being grossly deformed.
2. Physical or mental abnormality needing special care throughout life.
3. Pregnant girl as a result of illicit intercourse (rape, incest, under 13).
4. Pregnant girl of unsound mind.

The Goals

A more effective contraceptive programme will reduce the frequency of unwanted pregnancies. An early, continued and realistic sex education will create a greater sense of responsibility toward pregnancy. Premarital and extramarital intercourse is occurring too frequently for us to remain blind to it. Good facilities and socioeconomic support for unwed mothers are necessary.

A broadening of legal norms to cover accepted medical practice is urgent.

Considering that 90% of abortions occur in married women, studies on the socioeconomic aspect of the problem should be initiated. Since women usually consult their physician before considering a criminal abortion, Dr. W. Calderone has suggested that each doctor when faced with the situation hand in to the public health authorities a record bearing no name or identifying material but recording the following:

1. The age of the woman.
2. Marital status.
3. Race.
4. Number of pregnancies.
5. Number and ages of living children.
6. Estimate of socioeconomic status.
7. Reason for wanting abortion.
8. Reason for refusal or granting abortion.

and finally the doctor's opinion, "If the law of this country left you completely free to exercise your medical judgment would your opinion be that this woman's pregnancy should be terminated?"3

We must stop playing ostrich. Abortion must be rid of its secrecy, guilt and shame. Panels of experts should be set up whom a woman can consult freely in complete confidence when considering an abortion. The risks of the operation can be explained to her at that time. Alternatives, for example adoption of financial assistance, can be discussed. "Scandinavians, from their experience, report that when a woman seeking an abortion is given the chance of talking over her problem with a properly trained and oriented person, she will in the process very often resolve many of her qualms and will spontaneously decide to see the pregnancy through, particularly if she is assured that supportive help will continue to be available to her."3

"Among women whom I have persuaded to go through with pregnancy", writes a prominent doctor, "none have regretted it and all have been grateful".2

Finally, if after all this, a woman still decides on abortion, the choice is her own and society has no right to intrude on her individual freedom. We owe her, however, the best medical protection to safeguard an operation which is neither dangerous nor harmful.

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Psychological factors play an important role in the premenstrual tension syndrome. Data collected from 255 women (aged 18 to 50 years) provided positive findings in support of the dynamic relationship between certain psychological factors and the intensity and frequency of premenstrual tension; continued analyses and deeper explorations of these and other psychological factors are needed. The present study, without discounting the significance of hormonal and endoctrinological factors, has uncovered several important psychological attitude clusters which are significantly related to heightened premenstrual tension. The data revealed that those women who showed high scores on the premenstrual tension scale tended to (1) report disturbed intrafamilial relationships; (2) have attitudes toward menarche and menses which were to a great extent associated with psychological stress and unhappiness; (3) believe that their own menarchial and menstrual experiences were more traumatic and more painful than those of other women; (4) portray themselves as inadequate and unable to fulfill maturely the psycho-social and psycho-sexual roles which (according to society and their own femininity) were expected of them; and (5) show on the self-concept scale a statistically significant tendency for increasingly negative attitudes toward the self to be associated with increased premenstrual tension. On the basis of these factors and more detailed analyses of individual items making up the attitude inventory, it is clear that both in adolescence and in adulthood the female's attitudes, feelings, experiences and interpersonal relationships are significant in understanding more fully the premenstrual tension syndrome.

The Plague of Population

by G. A. McQuibban 6T3

The ghost of an eighteenth century English clergyman is walking the world today. In 1798, Thomas Malthus predicted that the world's population would shortly outstrip its food supply. He postulated the famous principle according to which population grows in a geometric ratio, whereas subsistence grows in an arithmetic ratio. No one took his gloomy prophecies very seriously, for the unprecedented prosperity of the nineteenth century seemed to prove him wrong.

The agricultural and industrial revolutions increased food production by introducing new methods of farming and new machinery, and the opening of vast new lands in the Americas seemed to indicate abundance for centuries to come. But today, one and a half centuries after Malthus predicted trouble, he has acquired a surprising number of disciples. Without question, the most terrifying and malignant of all social diseases is the scourge of mass procreation. The changing size and shifting distribution of the world's population affects, in some measure, every social, economic, and political problem with which the nations of the world must contend.

"Unless man readjusts his way of living, in its fullest sense, to the imperatives imposed by the limited resources of his environment, we may as well give up all hope of continuing civilized life. Like Gadarene swine, we shall rush down a war-torn slope to a barbarian existence in the blackened rubble."[1]

Basically, it is the problem of the fertility of man versus the fertility of the earth.

The People

In past ages, the population of the world was controlled by famine, pestilence, and war. Man's death-rate was so high that it balanced his birth-rate. Until the middle of the seventeenth century there were probably never more than 500 million people living at the same time. Then, the world's population started to increase, and it has kept on increasing ever since. By 1800, it had doubled, and since then it has doubled again. There are many complicated reasons for this dramatic rise, but not the least among them is improved standards of public health care. The discovery of antibiotics and immunizing vaccines, along with mass inoculation programmes, has done much to alleviate dreaded and fatal illnesses, and greatly increase life expectancy. Perhaps the miracles of modern medicine have so disrupted the balance in nature that man is now unable to cope with his own numbers.

The United Nations reports that the population of the world will pass three billion early in 1962. This represents a yearly increase of forty-five to fifty-five million people. In other words, each morning 137,000 new faces are crying for their breakfast!

An analysis of this population explosion reveals many startling facts. The average increase for all countries is believed to be approaching 2% per year, or twice that of the years before the Second World War. This accelerating growth is crowding more and more into cities where lack of employment, housing, and education is leading to family breakdowns, delinquency and unrest. The increasingly high costs of care for the aged are forcing cuts in comfort, with the result that the additional years which modern society bestows are unhappy ones. When under-developed nations change into industrialized countries, old ways are abandoned, and attitudes and behaviour are controlled more by demagogy or mob spirit than by the established values of home and community.

The manner in which these human inflationary trends are spread over the world is unexpected. We all know that India and China have population problems, but in fact, the number of people in the United States is increasing at a greater rate than in India. More important, this increase is found at all social levels. This dispels the old argument that population increases would disappear with prosperity, because people preferred cars to children, and we would all be living in a comfortable, permanent millennium of luxury. It is now evident that high prosperity does not prevent great increases in numbers.[2]

Now, let us examine the other half of the equation.

The Land

The total land area of the globe is about thirty-six billion acres, one-half of which is covered with mountains, bogs, deserts and ice. Of the remainder, soil experts say only some four billion acres are fit for cultivation. That is, they have the proper combination of fertile soil, suitable climate, and workable land surface needed to produce crops.

How many people can four billion acres feed? Nutrition authorities estimate that it takes an average of two and one-half acres to feed and clothe one person. When we divide the four billion acres by the three billion people now in the world, we find that we have only one and one-third acres per person — a startling reminder that the world already contains more people than it can properly feed. Not only is there not enough arable land, but much of the arable land that does exist is losing its fertility. Our whole civilization depends upon a thin layer of topsoil less than one foot in average depth.

That food-giving topsoil was built up slowly over thousands of years, and when it is gone it cannot be replaced. Today, erosion is proceeding at a rate and on a scale unparalleled in history. More than one million square miles of new desert have been formed, and far greater areas are approaching desert conditions. In the vast Eurasian grasslands and the great wheat-producing blue soil regions of Russia, erosion is reported to be extensive and acute. In Australia and South America it is even worse than in the United States.

Thus, unless something is done, we are likely to have less rather than more arable land, and hence less resources to feed a population which has already exceeded the boundaries of the present world's store.

Obviously, there are two solutions to this untenable situation:

(1) — Produce more food.
(2) — Check the growing population.

Can We Produce More Food?

Can we extend areas of cultivation? Soil experts assert that there are no undiscovered reserves of productive land of any substantial area. Tropical rains have leached out the soil of the jungles so it cannot produce good crops. The value of irrigation projects is usually limited. One must remember that already one-quarter of the world's food is raised on irrigated land, and in some countries such as India and China this method has been developed as far as is feasible. Irrigation is expensive and often it is impossible to meet the original cost and annual maintenance. The development of new types of crops, which would grow on land too dry or too old for present-day produce, has hopeful aspects. Even at best, by employing extensive irrigation and new crops, it is doubtful that the food-growing areas could be extended as much as 25% — a figure far short of present needs.

Can we get more food from present crop land? There is a good chance of increasing the yield of existing farmlands. Various methods of implementing this have been suggested. Intensive farming, which devotes more care and labour to the land would undoubtedly produce more food. However, the yield per acre might rise while the yield per worker falls. Thus, more of the food produced would be eaten by the people on the land, and there would be a smaller surplus to sell. The greater use of farm machinery is advocated by some experts. This is satisfactory only on certain types of land. Mechanical equipment adapts itself well to the broad plains of North America, but it would decrease efficiency and production in the small fields and hilly regions of countries like Japan and Java. More intensive use of fertilizer would greatly increase the yield of worn out fields. Happily, potash and phosphate are both abundant while nitrogen in the air may be readily converted into fertilizer products. However, once the land has received the minerals, its productivity cannot be further increased. Rigid practices of soil conservation would preserve the present crops from deterioration and restore fertility to the land. This offers the best chance for increasing yield, and steps must be taken to enable the world's hungry people to reverse their wasteful farming practices.

Can we check waste? The losses in bread grains comes to over thirty million tons per year. This is due largely to the carelessness on the part of handlers. It is estimated that 10% of the world's crops are destroyed each year by rats and insects. These losses could be lessened by greater protection of food, and more intensive measures to protect crops from rodents and disease.

Can we farm the sea? This is a debatable issue. It has been suggested that improved fishing methods and better refrigeration would allow access to the vast schools of ocean fish. However, the number of fish is limited by the amount of plant

food available, and ocean plant life must have sunlight, thereby restricting itself to comparatively shallow water. The possibilities are interesting, but at present, fish make up less than 1% of man's total food.[3]

Can science produce food? Here again, the situation is hopeful, but experimental results have not been conclusive. Hydroponics, which is the growing of plants without soil in water tanks containing chemicals, is still highly speculative. Such war-time advances as the production of synthetic sugar from wood have been encouraging, but lately most scientific energy has been channelled in other directions.

We would do well to heed Aldous Huxley when he stated: "Up to the present, the rulers of the world have been ready to lavish time, energy, money and brains upon the development of atomic and biological weapons; it might be a good thing to use the resources of applied science for the relief of the world's hunger and the removal of one of the principal causes of war. . . . Chemists and biologists should be enlisted to collaborate on a series of Manhattan Projects, not of destruction, but of creation."[4]

Can the Growing Population be Checked?

Can effective contraception be instituted? There is much debate today about the issue of birth control. With the advent of such oral devices as "Enovid", minority groups all over the world are shouting about the pros and cons and morality of contraception, without ever examining the basic problems. It is doubtful whether any method used to deter procreation will ever be successful. In the first place, many of the world's people have strong religious scruples against birth control. The Roman Catholic Church is dogmatic in its stand against artificial contraception. Hindus regard the act of procreation as a sacrament, and the Chinese believe that their welfare after death depends upon having many children to pay tribute to their memory. Secondly, nations concentrating upon power politics are unlikely to favour anything which may reduce their available manpower. Thirdly, birth control cannot be satisfactorily practiced by people, who for the most part, are very ignorant and very poor. Finally, nature's brutal method is automatically stabilizing, whereas any man-made device is only too likely to be unstable.

In the highly improbable situation where half the world practices birth control and the other half refuses to do so, then, within about one generation the proportions will have become one-third to two-thirds, and shortly the birth controllers will only be a small minority. In the more likely event of a nuclear conflict, the problem would still be prevalent. If someone embarks on an atomic war and kills half the world, it would take only fifty years to double the population again up to its present value.[5]

There are those in our enlightened scientific age who say the population problem may be relieved by the migration of earth people to the distant planets. Apart from extending our imperfection, it is difficult to imagine, even in the age of Flash Gordon, a space-ship capable of removing 137,000 people from the earth each day. Even then, this would only stabilize an already hungry population.

Other great plagues have been successfully controlled by the ingenuity of man. Only the future can reveal if mankind will be successful in eradicating the malignant epidemic of over-population.

Summary

Since there are so few of the good things in life, and since they are so unevenly distributed, there is plenty of incentive to attempt to redistribute them. As the pressure of population on the food supply increases, there will be more. Unscrupulous political leaders, tempted not as Eve was by the fruit of a tree but by the lush fields in neighbouring countries, may start conflicts affecting the lives and fortunes of millions. For the world as a whole, many problems of production and distribution, reproduction and contraception, economic and political development remain to be solved before all the people of this or any succeeding generation can adequately live in peace and nourishment.

Some problems have been presented here only in very broad outline, for, to quote J. H. Woodger, "The situation is complicated and its difficulties are enhanced by the impossibility of saying everything at once."

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DIAGNOSTIC RADIOLOGY

Figure 1.

This six year old boy presented with a limp and pain in the left thigh. From what disease process does he suffer and what is his prognosis?

Figure 2.

What is the diagnosis?

Figure 3.

For the "A" students. What disease does this film of a nineteen months old female represent?

Figure 4.

In what disease of young children would you find this picture?

DAVE NAIRN

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UPJOHN ABSTRACT: *Diabetes Test: Prednisone-Glycosuria Test for Prediabetes.* Joplin, G. F.; Fraser, R.; Kelley, K. J. (Dept. of Med., Postgrad. Med. Sch. of London, London, W. 12); Lancet II:67-70 (July 8) 1961.

Results of a standard oral glucose-tolerance test (G.T.T.) may be normal in patients with prediabetes, which may cause abnormal pregnancies or be a sign of acromegaly and Cushing's syndrome. A prednisone-glycosuria test, which the authors described and used in 102 subjects, appears capable of satisfactorily demonstrating such prediabetes.

After 3 days of controlled diet (containing 300 Gm/day of carbohydrate) and simple preliminary blood and urine glucose estimations, subjects ingested 3 doses of 20 mg. of prednisone at midday, 4 p.m., and 8 p.m. and fasted from 7 p.m. until 6 a.m. the next morning. Urine passed between 10 p.m. and 6 a.m. was collected, and the overnight urinary-glucose output was measured by a simple titration method; over 60mg/hour is considered abnormal and indicative of prediabetes. When possible, blood was also drawn at midnight and 1 a.m. for sugar estimation; over 133 mg/100 ml is probably abnormal.

In 11 pregnant and 12 non-pregnant normal subjects with normal results of G.T.T. and without renal glycosuria, the value for "titrated" overnight urinary glucose after prednisone never exceeded 60 mg/hour, i.e., normal values were found. Among other subjects with normal results of G.T.T. and without renal glycosuria, abnormal results were found by means of the prednisone-glycosuria test in 10 out of 21 relatives of diabetic patients, 9 out of 13 mothers with large babies, and 4 out of 5 active acromegalics. All 10 patients with mild diabetes showed levels above 60 mg/hour. Fourteen subjects with renal glycosuria were also tested, but further studies are necessary before the test-results in this condition can be interpreted.

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Obesity — Our Brave New World

by James Paupst B.A., 6T2

Human beings are given free will in order to choose between insanity on the one hand and lunacy on the other.

Huxley carries this idea to fulfillment in *Brave New World*. But there is an analogy to contemporary society where the prevailing philosophy of life is proceeding to a kind of Higher Utilitarianism. We are moving to the state where science and technology will be used, as though, like the Sabbath, they had been made for man; not as though man were to be adapted and enslaved to them. For many, the contemporary choice in this transition period is between anxiety on one hand and frustration on the other.

Food has become the *soma* of our Brave New World.

North Americans are carrying 125 million tons of extra fat. Dr. Cappon observes that the *scientifically* and, therefore statistically conscious American has become weight-conscious. This may, he states, be a bad thing by itself, for self-consciousness leads to anxiety, anxiety often leads to over-eating, and over-eating is the main mechanism of obesity.[30] This aspect of obesity will be considered here.

The Personality Of Obese Women

In the Suczek study[31] it was concluded that there was a high degree of narcissitic strength and interpersonal dominance shared by a majority of obese women in their sample. And this group was clearly distinguished from other symptom groups, including psychiatric, psychosomatic patients and even in some respects, normal controls.

Their personality study was carried out in relation to two basic questions: what common psychologic characteristics are shared by obese women, and what differences there are among obese women which relate to the degree of obesity, and the ability to lose weight?

Whether faced with psychotherapy or with a weight reduction program, it is highly probable that obese women are apt to enter into an intense power struggle with their therapist, resisting his efforts rather than accepting a mutual responsibility for their treatment.

With respect to personality differences between obese women and the relationship of such differences to the degree of obesity and to ability to reduce, a much more complex problem arises. They found some tendencies in the grossly obese to be the most power-oriented. Among them there are also more of those who are aware of anxiety, and of internal psychologic stress. However those tendencies are not clear cut or consistent and there is repeated evidence in their findings that psychologic factors may not relate to either the degree of obesity or ability to lose weight.

The unsuccessful long range response to a weight reduction program suggests a regressive addiction similar to alcoholism.[32]

The Psychology Of Eating

While exercising proper medical precautions, we can take comfort in the clinical attitude expressed in the following sentence: "The only glands involved in obesity are the salivary glands".

Heredity and other factors such as hypothalamic control may be important in that they may control appetite but the preponderance of evidence is in favour of an emotional cause for the hyperphagia in most patients.[33]

It is readily recognized that in some families food is an important means of obtaining both real and symbolic satisfactions for deficient rewards from other interpersonal transactions. Parents who have suffered starvation and other deprivations may use food to build up their own importance to their children and reassure them against racial and economic insecurities. On the other hand, if the child refuses to eat, the interpretation may be made that she is publicly exhibiting the failure of the parents to give the child sustenance it needs.[34]

Hamburger[35] finds it useful to divide his obese patients into four groups:

a) Overeating as a response to nonspecific emotional tensions.

b) Overeating as a substitute gratification in intolerable life situations.

c) Overeating as symptom of an underlying emotional illness, especially depression and hysteria.

d) Overeating as an addiction to food.

In an area in which there are a multitude of hypotheses, the above classification imparts a clinically useful scheme.

The Phagocytes

This group, which I deem *the phagocytes* are those which gain immediate satisfaction in the incorporation process. They have a heightened sensory pleasure in the ingestion of food. The psychology involved with this pattern is indefinite. They are deeply indebted to those who give them something to eat, and who eat with them.

V. S. Pritchett in a short story in *The New Yorker,* entitled *Two Roast Beefs* acidly characterized this type of individual:

> "Plymbell thought Miss Tell ill-bred to suggest that he would eat what she did not want. He affected not to notice and gazed over her head, but his white hand had already taken the plate, and a moment, still looking disparingly beyond her, in order not to catch her eye, Mr. Plymbell bit into one of Miss Tell's biscuits. Miss Tell was smiling slyly.
>
> After he had eaten her food, Mr. Plymbell looked at Miss Tell with a warmer interest. She had come to work for him in his mother's time, more than fifteen years before. Her hair was still black, her skin now was gray and yellow with a lilac streak on the jaw, there were sharp stains like poor coffee under her eyes.
>
> These were brown with a circle of gold in the pupils, and they seemed to burn as if there were a fever in their shadows. Her black coat, her trousers, her cotton blouse were cheap, and even her body seemed to be thin with cheapness. Her speech was awkward, for part of her throat was half arrogant, half disheartened. Now, as he swallowed the last piece of biscuit, she seemed to him to change. Her eyes were brilliant. She had become quietly a human being.
>
> What is a human being? The chef whom he could see through the hatch was one; Polli, who was looking at the menu by the cash desk, was another; his mother, who had made remarkable ravioli; people like Lady Hackthrope, who had given such wonderful dinner parties before the war; that circle which the war had scattered and where he had moved from one lunch to the next in a life that rippled to the sound of changing plates that tasted of sauces now never made. These people had been human beings. One knew a human being when the juices flowed over one's teeth. *A human being was a creature who fed one.* Plymbell moved his jaws. Miss Tell's sly smile went. He looked as though he was going to eat her."

Portrait Of A Fatman

The word obesity is traced back to 1611 and means the "condition of being very fleshy, corpulent". It is derived from the Latin "obesus" meaning "that has eaten itself fat", the passive particple of "obedere, to eat away." (The Shorter Oxford English Dictionary)

In his delightful monograph on obesity, Leonard Williams has occasion to discuss classification. He says, "The unlovely condition called corpulence or obesity has been divided into three stages known respectively as the enviable, the comical, and pitiful. Such classification is based upon a false estimate of values, for no case of obesity is enviable. Most of them are in a sense comical, and all are pitiable."

Consider the fat man: unaesthetic, socially cloistered, psychologically crippled. He has more of the properties of a colloidal suspension than of a solid; he is predisposed to diabetes, hypertension, gallstones, and heart failure. In motion, he pants, sweats excessively, and creaks with osteoarthritis.

The Fat Ivy-Leaguer

The obese Ivy-Leaguer is a geometric incongruity. The Ivy-league form depends upon tight parallel lines in the longtitudinal axis. The globular or spherical configuration of the obese college boy disrupts these parallel forces. The unaesthetic result has produced a social phenomenon which has been studied by Dr. J. C. Dravrah, a Harvard sociologist.[36] He studied groups of obese students, extruded socially by virtue of their form, at Yale, Princeton and Harvard.

Partly because of their meeting as a group to be interviewed by Dr. Dravrah, the Yale group formed a "renegade band of anti-Ivy Leaguers."

As a group they met each second Monday and engaged in a series of seminars entitled, "Food, the Universal Symbol". Their spirit was at first facetious, (an offshoot of the group was a movement called *Athletics Anonymous* whose members, when they felt the need for strenuous activity, would call a friend who would come over and have a drink and dissuade the errant member) and during their seminars on the symbolic value of food they poked great fun at the concepts of "repressed hostility reactivating primitive canni-

balizing impulses aimed at eating the enemy who is substituted for by food; of yearning for a lost person or situation and orally incorporating the lost person or returning to the primitive oral state of mind; eating oneself into the grave may be associated with desire for self-punishment and self-degradation to expiate guilt and to justify rejection by others." [30a] These concepts were later washed down with many litres of beer.

However Dr. Dravrah observed that they became more introspective, and collectively began to feel shunned and ridiculed. Their jocularity and skylarking were unable to disguise the stigma of being obese.

The Yale group spiritedly began a weight reduction program. Dr. Dravrah too (cf. Suczek study) found that many of the grossly obese were power-oriented. But perhaps because of their intellectual standing and the group procedure, the long range weight reduction was quite successful. And this group method has had further gratifying results.

Apologia Pro Suum

Since so many of my cohorts have been indicted and pilloried in this article, words must be said on the virtues of being obese.

The German poet Schiller wrote:

"It is the spirit which builds itself a body".

Those of us who are obese have built fortresses to defend against a hostile world, symbols of solidarity, and an intimidation to enemies.

We are all endowed with an intuitive sense of thermodynamics, for no one will deny that we are not in positive energy balance.

Caesar stated our position well:

"Let me have men about me who are fat;
Sleek-headed men and such as sleep o'nights:
Yon Cassius has a lean and hungry look;
He thinks too much; such men are dangerous".

And what figure did Joyce invoke to introduce us to his wonderful epic-tale, *Ulysses? Stately plump* Buck Mulligan, a medical student, genial and blasphemous, his plump figure "recalled a prelate, patron of arts in the middle ages."

A modern author has written, "imprisoned in every fat man, a thin one is wildly signalizing to be let out". It is only due to our Buddha-like vigilance that these thin melancholy creatures have not been loosed upon society.

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ABSTRACT: *Mechanisms of Shock as Reflected in Studies of Lymph of Abdominal Organs.* F. Alican and J. D. Hardy: Surgery Gynecology and Obstetrics, 113:743, 1961.

In studying the physiology of shock, it is convenient to use dogs, in which shock has been produced by injection of E. coli endotoxin. It has been found that a certain pattern of haemodynamic events is characteristic of shock so produced, and also of haemorrhagic shock. This characteristic pattern is an immediate rise in portal venous pressure followed quickly by a considerable fall in arterial pressure, which shows a lesser, and gradual rise, followed by decline, ending in death or recovery.

In this study, lymph flow from liver, intestine, and in thoracic duct was measured, along with portal and systemic arterial pressure determinations in dogs in whom endotoxin shock was produced. Measurements were also made in dogs with Eck fistulae. It was found, in dogs with intact portal circulation, that subsequent to endotoxin injection, there was a prompt rise in liver lymph flow which paralleled the rise in portal vein pressure. In the animals with porta-caval shunts there was no such initial fluctuation. However in both groups there was a later, more gradual increase in intestinal lymph flow. Both the immediate and delayed rises were reflected in thoracic duct lymph flow. The presence of Eck fistula did not affect survival rates, nor did it prevent the typical congestive, haemorrhagic lesions of intestinal mucosa. Studies of the lymph composition revealed no constant relationship to other variables in the experiment.

This data suggests that the liver is a primary target organ in shocked animal, probably via hepatic vein constriction, and that the intestines are the site of a reaction important in the death of the shocked dog. A.F.D.C.

Psoriasis

by Marilou Waite 6T2

Psoriasis is a chronic disease of uncertain etiology and difficult management. In 1868, Hebra wrote, "Relapses are very common in psoriasis, so that a single attack without any subsequent return of the disease is a very exceptional occurrence. It is impossible to say, in any particular case, how long the disease will last, whether a relapse will occur, or for what period of time the patient will remain free from psoriasis."

The disease is characterized by an erythematous papule covered by silvery scales, joined to its neighbours to form plaques of various sizes, occurring on extensor aspects of limbs on scalp and over bony prominences. The scales have a mother-of-pearl appearance, and when they are removed, tiny red haemorrhagic spots are left behind. The Koebner phenomenon may be seen in which lesions develop in scratch marks or areas of irritation. The eruption is symmetrical and may vary from a solitary spot to widespread involvement. The lesions are relatively non-pruritic.

The course of the disease varies greatly. It usually begins on the scalp and extensor surfaces of the elbows. It may remain in this location for some time, or it may disappear, recur or spread to other areas.

Several varieties of the disease have been named. *Guttate psoriasis* consists of small, drop-like lesions. In *follicular psoriasis,* tiny scaly lesions are located at the orifices of the pilosebaceous follicles. Curved linear patterns produced by central involution are seen in *psoriasis gyrata.* The flexural and intertriginous areas are involved in *psoriasis inversa.*

Changes in the nails are often seen. There may be pitting, brownish discolouration, uplifting of the distal portion of the nail bed, cracking of the free edges and hyperkeratosis.

There is a definite association of a rheumatoid-like arthritis with psoriasis. This psoriatic arthritis produces pathological changes identical to those seen in rheumatoid arthritis, but the distribution of the lesions is slightly different. The distal rather than the proximal inter-phalangeal joints are involved. Non-specific inflamation may be seen in heart muscle and pericardium. Approximately one third of the arthritics have involvement of the spine. Rheumatoid nodules have not been found and serologic tests are usually negative. This arthritis is seen in 5-10% of psoriatic patients.

Incidence

The incidence of psoriasis varies anywhere from 1% in New York to 15% in prisoner-of-war camps. The disease is seldom seen in children, and is usually the guttate type, clearing spontaneously. In children, psoriasis may be localized to the scalp. It is common in young and middle-aged adults, but may appear for the first time in the aged. The sex incidence is equal, but female patients develop more arthropathy.

Diagnosis

The typical case of psoriasis with typical scales and distribution offers no problem in diagnosis. When the scalp alone is involved or the flexural and intertriginous areas, the disease may be very similar to seborrheic dermatitis or moniliasis. In seborrheic dermatitis, the lesions are more widespread, the scaling is greasy and there is a tendency to loss of hair.

Psoriasis may be confused with pityriasis rosea. In this disease, the eruption is located on the upper arms, trunk, and thighs, and the duration is much shorter. The oval, fawn-colored patches show a central crinkling of the epidermis and very slight scaling. The herald patch is seen at the onset, and the lesions often run parallel to the ribs.

Lichen planus chiefly affects the flexor surfaces of the forearms and wrists, shins and ankles with thickened, pruritic patches. Sometimes the lesions are a dirty brown color, and must be examined closely when it is seen that the scaling is different from that seen in psoriasis.

Eczema is usually seen on the flexor surfaces. Exudation with some grayish scaling accompanied by itching is characteristic.

Discoid lupus erythematosis is characterized by discrete plaques seen usually on the face and scalp associated with atrophy, scaling and alopecia. The scales are grayish and adherent. Only occasionally does psoriasis affect the face.

Etiology

Although the etiology of psoriasis has not yet been established, much work is being done in this field. It was formerly thought that lipid factors played an important role, but prisoner-of-war patients on a starvation diet had an increased incidence of psoriasis. Hormone influence was studied because psoriasis often appears at puberty and clears during pregnancy. However, there is not sufficient evidence to prove this theory. In recent studies of proteins in psoriatic scales, evidence was found of deficiency of dipeptidase activity in psoriatic skin. (This is the enzyme which hydrolyzes proteins into water-soluble polypeptides.) This activity is depressed by an unidentified inhibitor in the overlying scale. Analysis of keratin shows a marked defect in sulphur storage in psoriasis. There may be an abnormal glycoprotein containing chondroitin sulphate, an important constituent of cartilage. This may also provide a link with the arthropathy associated with the disease. Other work has shown there is a defect in aggregating and incorporating lipid to form the final keratin fibers of the horny layer. The reason for this failure is not at present clear since the terminal stages of keratin formation are not fully elucidated. In about 25% of cases, there is a family history of the disease. Several people of one family may develop it. Practically all evidence points toward an enzyme defect, most probably of genetic origin.

Pathology

In this disorder of keratinization, changes are seen occurring in the vasculature of the upper cutis, involving both dermis and epidermis. The capillary loops are dilated and tortuous, and are surrounded by a perivascular infiltrate of lymphocytes and leukocytes. Small polymorphonuclear-containing abscesses, called Munro abscesses are located high in the epidermis. There is diffuse parakeratosis, acanthosis and papillomatosis, clubbing of the popillary bodies. The papillae are very long and reach far into the epidermis. Consequently, bleeding points are seen when the scales are removed.

Psoriasis may be distinguished from eczema by the paucity of oedema, the absence of spongiosis and vesicle formation, by the clubbing of the papillae and the tortuosity of capillary loops.

Treatment

There is no specific treatment for psoriasis, but various forms of therapy are beneficial. The disease is remarkable in its chronicity, and sometimes tends to become resistant to all forms of therapy.

Local Agents. If the disease is in the acute stage, soothing agents only should be used. Colloid baths, such as oatmeal are beneficial. Application of 1% water-soluble tar in boric acid ointment, or 2-4% ammoniated mercury. In the chronic stage, the scales should be removed with soap, water, and a brush, *Snap* or sandpaper before applying medication. Following this, a keratolytic drug is most helpful. A combination of 3% salicylic acid and 6% ammoniated mercury in ointment base is suitable and the strength of the drugs may be increased as tolerance develops. Coal tar ointment with or without 2% salicylic may be used. Dithranol 0-1-1% in 2-8% Vaseline is a good remedy but it should be used with caution as it is an irritant and sensitizer. For scalp lesions, a shampoo containing selenium sulphide, or salicylic acid 4% and ammoniated mercury 6-12% in Alcolan may be used.

In hospital, the O'Leary routine is used. Daily treatments of coal tar, oatmeal baths and ultra violet light have proved very beneficial.

Systemic Agents. Sedatives are helpful, especially in the acute stage. Arsenic, in the form of Fowler's solution is sometimes used in stubborn cases. However, it has been proved to be carcinogenic and should be reserved for older patients. Calciferol, 600,000 units twice weekly for 4-6 weeks is dramatic in stubborn cases.

Experimental work is being done with the drug hydroxystilbamidine. It is concentrated in psoriatic scales when taken systemically, and has caused remission in 9 out of 11 cases. However, further work needs to be done before final assessment can be made.

Steroid therapy is used only for short intervals for acute exacerbations that are resistant to other forms of therapy. The side-effects are far too dangerous to subject the patient to long term usage. If exfoliative dermatitis develops from psoriasis, steroids are then used.

Physical Agents. Sunlight and ultra violet light are usually helpful. In recurring cases it is often advisable for the patient to own a sunlamp. Care must be taken to avoid sunburn because this may result in the Koebner phenomenon.

Summary

Some of the problems of psoriasis have been outlined. The symptoms and, differential diagnosis

and pathology are discussed. Various theories of etiology and present investigation are briefly dealt with. Finally, methods of treatment are presented, both topical and systemic.

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ABSTRACT: *Inspiratory Traction on the Pericardium — The cause of pulsus paradoxus in pericardial disease.* W. Dock: Archives of Internal Medicine, 108: 837, 1961.

Pulsus paradoxus is defined by the author as an inspiratory drop in arterial pressure and pulsation with a rise or no significant fall in venous pressure, and is seen in cases of pericardial disease with cardiac constriction, or effusion with tamponate. It has been stated that this effect was due to the descent of the diaphragm, tensing he pericardium and interfering with diastolic filling of the heart. The author verified this by measurement of intrapericardial pressures in cadavers with movement of rib cage and diaphragm to simulate respiratory excursion. It was found that elevation of the sternum, and descent of the diaphragm together or singly (especially descent of the diaphragm) caused an increase in intrapericardial pressure.

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Diagnostic Radiology

Answers to Questions from page 120 - 121

Figure 1. Legg-Perthe's disease.

Aseptic necrosis of the femoral capital epiphysis (Legg-Perthe's disease) nearly always occurs only in the five to ten year age group and predominantly in males. The aetiology of the condition has not been discovered yet, but a local disturbance of blood supply is believed to play a part.

The radiographic change seen in this lad's left hip are fairly typical of this disease in a fairly advanced stage. On this film can be seen increase in the left hip joint space, flattening of the femoral capital epiphysis, and a granular or fragmented appearance of the capital nucleus due to areas of increased density being interspersed with areas of relative porosis. The majority of cases have involvement of only one hip, as in this case, but a certain number present with involvement of both hips, either simultaneously or successively.

Prognosis: General health is not affected but there is danger of severe deformity of the hip joint. If this happens, the later development of osteoarthritis between the ages of thirty and fifty is almost inevitable. However with successful treatment, (ie. protection from weight bearing throughout the period when the bony nucleus is soft) many cases go on to completely normal adult development with sound hip joints. The prognosis is more favourable in the younger children. By age sixteen, this young man had a radiographically normal appearing left hip.

Figure 2. Monteggia fracture-dislocation.

This injury consists of a fracture of the upper third of the ulna with dislocation of the head of radius. In the film shown one can see the usual displacement seen in this injury: the ulna is angled anteriorly and the head of the radius is dislocated forwards. The reverse deformity is rare. The Monteggia fracture — dislocation is usually caused by a fall associated with forced pronation of the arm, but it can also be caused by a direct blow on the back of the upper forearm.

This film illustrates the importance of two views of fractures; for, in the antero-posterior view, the dislocation of the elbow would be missed. Also, the joints above and below should be included, for the same reason. Printing reproduction allowing, one may also see the anterior displacement of soft tissues in the forearm by this fracture, causing a hump and distortion of the elbow joint.

Treatment. Accurate reduction is essential. By fully supinating the forearm it may be possible to reduce both the fracture and the dislocation. If the manoeuvre is successful, a plaster should be applied with the elbow at a right angle and the forearm supinated. The paster is left on till union occurs, usually about twelve weeks. If closed reduction is not satisfactory, open reduction with excision of the radial head and fixation of the ulna, by plate and screws or intramedullary nail, may be necessary.

Figure 3. Osteopetrosis (Albers-Schonberg's disease).

Other names for this disease are: Marble bones, Chalky bones, Congenital Osteosclerosis and Osteosclerosis fragilitas generalisata. The disease has been discovered in cases varying in age from the foetus in utero to late adult life, and a hereditary factor appears to be involved. It is a rare condition.

Associated conditions often found are hydrocephalus, nystagamus, paralysis of eye muscles, blindness, necrosis of the jaw, carious teeth, underdevelopment, and spontanteous fractures—early in life; and, later in life — spontaneous fractures, cranial nerve palsies and progressive anaemia. These findings usually are due to the abnormality of bone growth. For instance, loss of medullary cavities leads to anaemia.

In this film can be seen the typical increase in density particularly of the metaphyseal bone but also of the shafts of the long bones. In this case the medullary cavities of femur, tibia, and fibula appear to be all but obliterated. There is increased thickness or clubbing of both ends of the long bones and the phenomenon of "ghost" bones, or duplication of the normal bone configuration in the middle part of the abnormal bone can be seen. Disease of this severity so early in life (19 months) has an unfavourable prognosis.

The bone, although dense in radiographic appearance, has been described as being from the consistency of chalk to that of marble. Increased hardness appears to be associated with age. In all cases the bone tends to be brittle, fracturing straight across as chalk does.

Treatment. None, except for complications.

Figure 4. Thalassemia (Cooley's Anaemia).

Erythroblastic anaemia or Mediterranean annemia, as this condition is otherwise called, occurs in two forms. Thalassemia minor due to a heterozygous gene, or Thalassemia major due to a homozygous gene. Thalassemia minor is an asymptomatic form in which a patient has mild anaemia but lives a normal life. Thalassemia major is a severe progressive anaemia incompatible with long life.

The roentgenographic abnormalities in Thalassemia major have been described in detail by Caffey. By the end of the first year of life there is widening of the medullary spaces, thinning of the cortices and decrease in size of the bony trabeculae. The small bones of the hand may be the first site of detectable changes in the tubular bones. Changes in vertebrae, skull and pelvic bones increase in intensity, whereas changes in the bones of the extremities may regress with age.

In the skull, there is widening of the diploic spaces so that the calvarium has a widened appearance. The inner and outer tables of the skull are thickened and the radiating trabeculae take on the appearance of many fine spicules. This gives the "hair-on-end" appearance seen in this roentgenogram of the skull.

UPJOHN ABSTRACT: *Fatigue Relief: Treatment of Fatigue with Aspartic Acid Salts.* Kruse, Charles A. (Seattle, Washington) Northw. Med. 60:597-603 (June) 1961.

The potassium and magnesium salts of aspartic acid relieved fatigue in many patients who complained of this symptom alone or associated with various clinical entities. The medication produced no amphetamine-like response, i.e., no quickening of speech, hyperkinesis, or insomnia. When placebos were substituted, patients usually reverted to the condition existing before the aspartates were used.

Of the more than 200 private patients given a supply of the aspartates, about 75% were available for follow-up. Any other required medication was also given. The usual schedule of administration was 1 tablet of aspartates 4 times a day for 4 weeks, following which placebos were substituted until the patient complained that the tablets were no longer effective.

Examples are given in which the response to aspartates was definitely clear cut and seemed to represent an actual objective result of the use of the aspartates without other medication. Most of the patients treated with the aspartates had fatigue associated with the following conditions:

post-influenzal syndrome — The response was generally as follows: muscular weakness, fatigue, washed-out feeling, and desire to sleep subsided in 2 to 7 days. neuroses — Results were quite uniform: relief from fatigue and more desire to be active; placebo trials resulted in recurrence of fatigue. gastro-enterologic problems — It was difficult to determine what part the aspartates played in their relief. menopausal syndrome — All but 1 of 25 women responded favorably and noticed a letdown when placebos were substituted. post-partum group — All 7 women felt very good in comparison with previous postpartum periods during 3 weeks they took the aspartates and felt tired after placebos were substituted. older age group — The response varied greatly.

Reference is made to reports from France of the use of aspartic acids and their salts for abolishing or reducing fatigue at the neuromuscular level.

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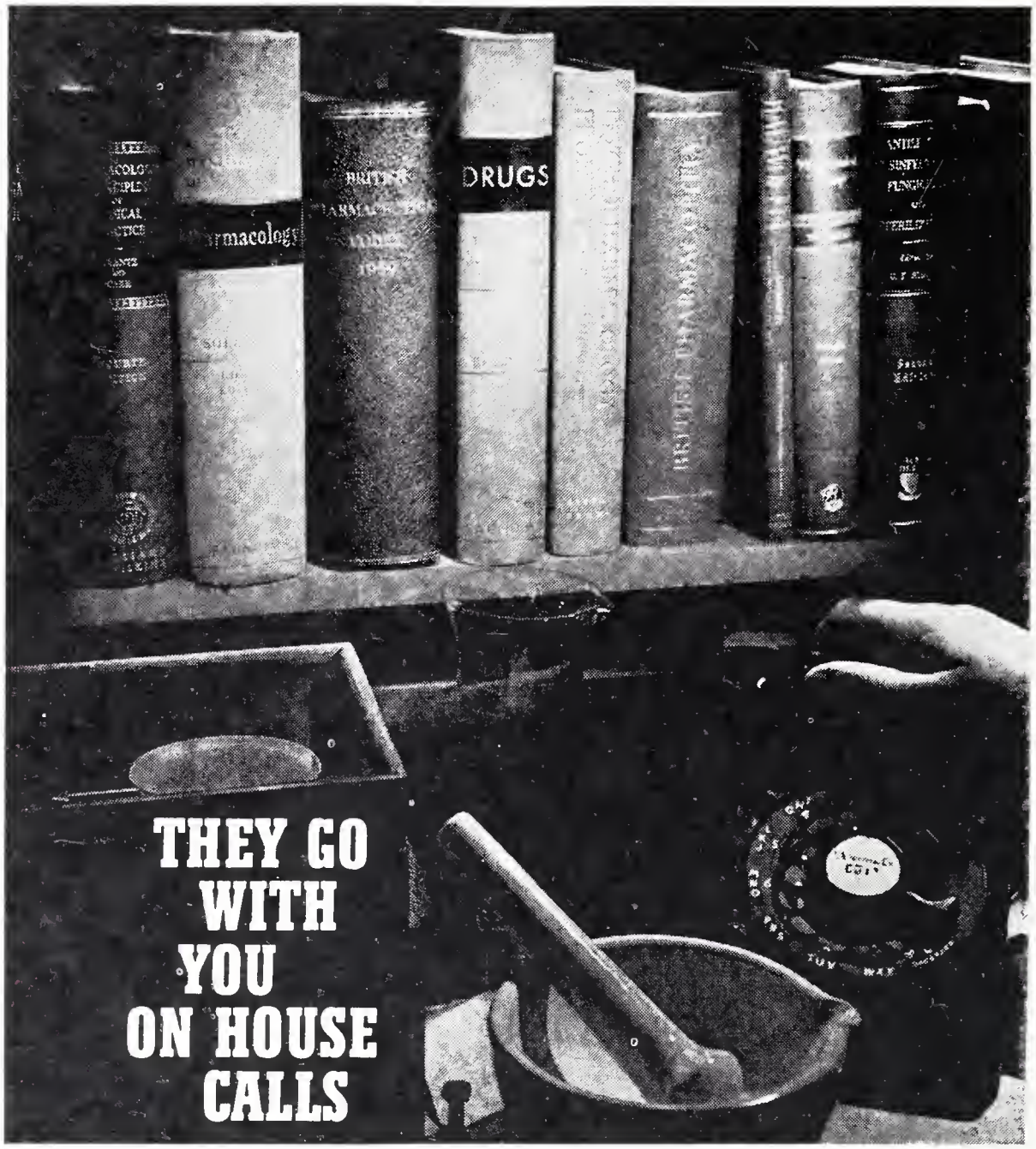

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